Texas Commission on Environmental Quality
Nonpoint Source Program

Lower Rio Grande Valley: Low Impact Development

Water Body	Arroyo Colorado Tidal (Seg 2201), Arroyo Colorado Above Tidal (Seg 2202)
Location	Hidalgo, Cameron, and Willacy Counties
River Basin	Nueces-Rio Grande Coastal (22)
Contractor	Texas A&M University at Kingsville (TAMUK)
Project Period	May 5, 2011 to June 30, 2017
Project Total	$3,735,168 (Federal 60% and Local Match 40%)

Background

The Lower Rio Grande Valley (LRGV) continues to be one of the fastest-growing areas in the United States. This urbanization is changing the natural hydrology of the region and increasing the pollution and stormwater runoff volumes being delivered to local water bodies. Best management practices (BMPs) must be utilized in order to slow and treat stormwater runoff before it enters and pollutes local streams. Low impact development (LID) is an innovative practice that mitigates the negative impacts of stormwater runoff by encouraging the retention and infiltration of stormwater on site.

The Arroyo Colorado is an important local water body that provides freshwater inflows to the Laguna Madre. The State has classified the stream into two distinct segments, the Arroyo Colorado Above Tidal (Segment 2202) and the Arroyo Colorado Tidal (Segment 2201). Both segments are impaired due to bacteria concentrations that exceed the state criteria for contact recreation. In addition, the tidal segment sometimes experiences periods of low dissolved oxygen that can result in fish kills. In order to restore water quality, the Arroyo Colorado Watershed Protection Plan (WPP) was completed in 2007. Implementation efforts have been ongoing since then and LID is one of the recommended stormwater control practices. The WPP is currently undergoing an update and will be completed by Spring of 2017.

Project Description

TAMUK and the LRGV Stormwater Task Force have partnered with various cities, governmental entities, and nonprofits in the LRGV to construct demonstration LID practices and study their impact on stormwater quantity and quality. The project is being completed in three phases. Phase I entities include: the City of Brownsville, the City of San Juan, the City of La Feria, and the Valley Nature Center in Weslaco. Phase II entities include: the Weslaco City Library, Cameron County Drainage District #1 (CCDD#1), and the City of Alton. Phase III entities include: the City of Alamo and the City of La Joya. These practices will provide educational opportunities for local citizens and local governments to learn about the benefits of LID. Once constructed, the effectiveness of the LID practices are being studied through data collection and evaluation. The study results will be incorporated into a LID regional technical guidance manual. An evaluation of local city codes will be conducted to determine any potential modifications that could better facilitate and encourage LID practice incorporation into new construction and development. In addition, current BMPs and LID practices have been inventoried and incorporated into a database.

Current Status

All LID practices have been constructed. Monitoring has been ongoing. Two cities updated their municipal code to allow for LID. Modeling of the LID practices just began. Contracts scheduled to end 6/30/17. LID Public Service Announcements (PSA) and Documentary will air on local channels soon.

Public Participation

The Arroyo Colorado Watershed Partnership provides a forum for discussion regarding WPP implementation efforts and water quality issues. Updates for this project will be given at Partnership meetings. The public is welcome to attend. Meeting dates are posted on the Arroyo Partnership Website.

For More Information

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Websites
<http://rgvstormwater.org/>
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Project Highlights

- 05/2011 –Phase I project began.
- 06/2011 – Construction began on VNC wetland.
- 09/2011 – Phase II project began.
- 09/2011 – The relocation of two LID sites was approved by TCEQ.
- 10/2011 – TCEQ Project Manager visited LID sites.
- 09/2012 – Phase III project began.
- 09/2012 – VNC Wetland Complete.
- 10/2012 – La Feria pervious paver parking lot complete.
- 10/2012 – TCEQ Project Manager visited LID sites
- 12/2012 – VNC Design Report complete.
- 12/2012 – Alton Design Report complete.
- 12/2012 – Weslaco Library Design Report complete.
- 02/2013 – Phase I Monitoring Quality Assurance Project Plan (QAPP) approved.
- 02/2013 – Brownsville Design Report complete.
- 03/2013 – Weslaco Library rainwater harvesting system complete.
- 05/2013 – Construction of 2nd application of La Feria pervious parking lot complete.
- 08/2013 – An interactive map showing the locations of various urban BMPs complete and posted to the web - http://green-map.herokuapp.com/#/
- 11/2013 – San Juan Design Report complete.
- 11/2013 – CCDD#1 Design Report complete.
- 01/2014 – VNC rainwater harvesting system and permeable pavement complete.
- 02/2014 – Phase II QAPP approved.
- 03/2014 – Monitoring of specific LID practices began.
- 03/2014 – CCDD#1 pervious parking lot and bioswale complete.
- 08/2014 – LID Technical Training held in Weslaco, TX.
- 09/2014 – Brownsville pervious parking lot and walking trail complete.
- 09/2014 – Draft Modeling QAPP received by TCEQ.
- 09/2014 – Alamo pervious surface trail complete.
- 05/2015 – Brownsville restroom and rainwater harvesting system completed.
- 05/2015 – San Juan bioswale, rainwater harvesting system, and rain garden completed.
- 05/2015 – 2ND LID Training held at South Padre Island, TX.
- 04/2015 – Draft Final Report for Phase I sent to TCEQ.
- 05/2015 – Phase I contract ended.
- 06/2015 – Phase II contract ended.
- 02/2015 – Monitoring QAPP Amended.
- 05/2016 – Annual LID Training Course held.
- 08/2016 – LID Documentary and PSA completed.
- 09/2016 – Geospatial QAPP renewed.
- 10/2016 – Modeling QAPP executed.